GARDEN AND FOREST.

PUBLISHED WEEKLY BY

THE GARDEN AND FOREST PUBLISHING CO.

OFFICE: TRIBUNE BUILDING, NEW YORK.

Conducted by . . . . . Professor C. S. SARGENT.

ENTERED AS SECOND-CLASS MATTER AT THE POST-OFFICE AT NEW YORK, N. Y.

NEW YORK, WEDNESDAY, JANUARY 15, 1896.

TABLE OF CONTENTS.

PAGE.

EDITORIAL ARTICLE:—Municipal Art Again 21
Bridge over the Kent at Levens Hall. (With figure.).....*Beatrix Jones* 22
The Retail Prices of Cut Flowers.....*M. B. C.* 22
Trees of Minor Importance for Western Planting.—I.....*F. A. Waugh.* 23
FOREIGN CORRESPONDENCE:—Gleichenias .....*W. Watson.* 23
PLANT NOTES..... 24
CULTURAL DEPARTMENT:—About Currants.....*W. P.* 26
How to Grow Peppers and Egg-plants.....*Will W. Tracy.* 26
Freesias.....*W. N. Craig.* 26
Oxalis versicolor.....*G. W. O.* 27
Notes from Harvard Botanic Garden.....*R. Cameron.* 27
Ardisia crenulata.....*T. D. H.* 27
Reinwardtia trigyna.....*Edward J. Canning.* 27
CORRESPONDENCE:—The Prospects for California's Orange Crop. *Wm. M. Tisdale.* 28
MEETINGS OF SOCIETIES:—The New Jersey Horticultural Society..... 29
RECENT PUBLICATIONS 29
NOTES..... 30
ILLUSTRATION:—Bridge over the Kent at Levens Hall, Fig. 3..... 25

Municipal Art Again.

A FEW weeks ago we alluded to the report of the Fine Arts Federation of this city on the location of the proposed monument to the soldiers and sailors who died in the war for the Union, for which a quarter of a million dollars had been appropriated by the Legislature. The legally appointed trustees of this monument fund had invited an opinion from the Federation, which consists of members of ten different societies in the city which are connected with various branches of the arts of painting, sculpture and architecture, and the Federation gave its reasons for considering the vestibule of the park known as the Plaza objectionable as a site. Further than this, and in order to give a definite and practical character to their views, the associated artists named another site and gave the reasons why they considered it an appropriate one. The commission did not adopt this report, but, on the contrary, voted in favor of the site condemned by the Federation. We expressed our regret at this decision, because we believe that if the city is to be made attractive by works of art these must be designed by artists of the first rank and their positions must be selected by men whose taste and training have fitted them in a peculiar way for deciding questions of this character. A committee of thirty picked men, three from each one of the affiliated societies, devoted a great deal of time and study to this subject, and no argument is needed to show that their judgment on such a point ought to be worth more than the offhand opinions of men who do not pretend to have any special education or experience to prepare them for work of this character.

The last number of *The Engineering Magazine* contains an instructive article on the Value of Good Architecture in Cities, in which it is shown how insignificant are the efforts to supply American cities with monumental and architectural adornment, when compared even with the second-rate cities of the Old World. Taking the City Hall Park of New York, for example, and the streets that surround it, attention is called to the fact that although this is a comparatively small space the buildings on the east and west are sufficiently distant from each other to escape any appearance of crowding. Not to speak of the meaningless public building occupied by the general government as a post office at the southern end of the park, ten million dollars would be a conservative estimate of the amount expended within the last decade upon the great buildings which now look down upon the little City Hall in the centre of the green. This sum of money, if it had been expended in Paris, for example, would have probably secured for that city one monumental building and a series of structures, each one of which would have been a genuine municipal ornament. Without criticising the buildings about this park, it is safe to say that, with one or two possible exceptions, if they were all destroyed no one would feel that the city had lost any priceless art treasures; and yet this is the very heart of the municipal life of the metropolis of the New World, and it is the one point in the city where careful artistic treatment is desirable, and where splendid surroundings would be constantly exerting their influence upon the taste and ministering to the pleasure of tens of thousands of people who daily pass through it. If the contemplation of objects of art which embody noble thoughts is more wholesome than the daily contact with objects which offend the sense of beauty, then the city which does not furnish dignified buildings, monuments and statues does not live up to its opportunities and fails to minister as it should to the wants of one part of our nature.

We hear much of republican simplicity, and it is sometimes argued that buildings of impressive proportions and lofty purpose are wasteful and contrary to that utilitarian spirit which is the foundation of our material progress. But the truth is that purity of line in buildings is not at all inconsistent with usefulness, and that an ugly structure may cost as much as one which has real value as a work of art. It is not the want of money, but the failure to appreciate the real worth of architectural beauty, that makes so many of our streets commonplace and featureless. We do not mean by this that our people, as a rule, lack good taste. It is only vulgarity and snobbishness which consider anything good enough for Americans. Our national, state and municipal authorities go on constructing public buildings which not only are lacking in ordinary comfort and convenience, but which have nothing in the way of stateliness or beauty to show for the vast sums that are every year expended upon them. And yet when by some happy chance some really meritorious building or monument or fountain is set up the plain people who are stigmatized as lacking the æsthetic sense at once recognize its value and look upon it with genuine satisfaction and pride, for they are quite as able to appreciate the beauties of a well-designed park or fountain or statue or building as any in the world.

One reason why we have no more good public structures lies in the self-reliant and self-sufficient feeling of men who are elected to office, and who assume, therefore, to decide upon questions of art with the same positiveness and assurance with which they decide matters of their own private business. So-called self-made men have too little respect for expert opinion in any direction. They consider themselves able to decide all serious questions, and questions of art they are apt to consider too trivial for any study. They seem to imagine that the artistic and the practical are in everlasting conflict, and they have not begun to learn the truth that the highest art in the laying out of a park or the construction of a building is simply the exaltation of its greatest practical value. The artistic view of a question is not something opposed to what is known as the common-sense view of the same matter. For example, the Report of the Fine Arts Federation on the site of the soldiers' and sailors' monument was a document full of hard, practical sense, and it set forth reasons for the conclusions reached that any man of ordinary cultivation could weigh. The fact is that the view of artists upon such a question is nothing but the view of the educated community, only the artists by their training are able to seize upon the real points at issue and present them in an orderly way for the

approval of the intelligent public. The artists and special lovers of art in any community are simply that part of the people who have thought the most about art matters, and what is the view of the artists to-day on a question of municipal decoration would be the view of every man of ordinary cultivation in the city if the same question was properly presented to him, and it will be the popular view in a year.

Bridge over the Kent at Levens Hall.

THE bridge illustrated on page 25 is a good example of the form of construction most often seen in the north of England and in Scotland. Built of the common serviceable stone of the neighborhood, these bridges look as if they had laughed at the elements for generations, and would continue their defiance for many a year to come. On the high road between Milnthorpe and Kendal this one crosses the Kent in the park of Levens Hall, where lovers of the curious may still see the topiary marvels created by the gardener to James II. In the home grounds the gently flowing river is bordered by tall grasses, the large leaves of the Coltsfoot and great tufts of purple Loosestrife, while in the deer park trees dip to the water as it saunters past. From the lawn in front of the house the little island, on which the pier rests, makes a pretty foreground to the bridge, which rises, gray and solid, above the waving tangle of flower and sedge.

Bridges of this sort would be just as appropriate here as in the old country, and would, of course, be more durable than the wooden constructions which are every year washed away by the dozen in the spring freshets. The initial cost, to be sure, would be greater, but in the long run the stone would prove more economical, since trifling repairs are needed, and these at comparatively long intervals. Here and there, in out-of-the-way parts of this country, stone bridges are still to be seen, but the structures which are now being built are almost without exception of wood or iron. If village improvement societies would turn their attention in this direction much could be done to restore streams, now defaced, to their original beauty. The simple lines and quiet color of this Ivy-draped bridge in Westmoreland are what make it satisfying to the eye and an added charm to the stream; it is made from the stone of the country, and the native plants grow about it as familiarly as though it were a bowlder playfully deposited there by Nature in the ice age.

New York. *Beatrix Jones.*

The Retail Prices of Cut Flowers.

IN one of the two articles on the New York Cut Flower Company which appeared in Garden and Forest during last November, it was stated that the retail price for cut flowers in this city seems unnecessarily high to Americans who have lived abroad, where they learn to consider choice flowers a necessity rather than a luxury, and examples were given showing the relative prices of roses and violets, which here are nearly twice as high as in southern Europe. By some persons this is attributed to the large profits of the commission houses, while others hold that the retail dealers receive the lion's share of the great advance in price over that received by the grower.

The retail florists of this city number about two hundred, not including a large class of street venders known as the Greeks, and representative dealers give many reasons, which seem convincing, for the prevailing scale of prices. In the first place, it is necessary to keep so large a stock of many different kinds of flowers that the capital required is considerable. Not a few firms, founded twenty or more years ago, have a history of moderate, steady growth from very small beginnings, sometimes less than one hundred dollars having constituted the original capital. But the same conditions which have affected the jewelry, dry goods, house-furnishing and other lines of trade have revolutionized the florist's business, and now a very modest establishment needs at least $5,000 to begin with, while double that amount is necessary to open a tasteful and attractive store in a good location, and a first-class business in a fashionable locality cannot be successfully started without a much larger investment. Furnishings and decorations in a store are expensive necessities, which may easily take $2,000 or more, besides the heavy outlay for horses and delivery wagons. A van, too, is a necessity, since these immense enclosed vehicles are heated and ventilated to insure the safety of tender and valuable stock, such as large decorative plants. Fancy baskets, silver bowls and artistic jardinières of many forms and all colors and shades are required in a first-class establishment, and one such house has in regular use 200 pedestals needed in the grouping of plants in decorations. While $50.00 is a minimum daily investment for cut flowers, the largest stores handle 5,000 to 20,000 individual flowers, for which they pay from two cents to $1.50 apiece.

Taking the year through, it is, perhaps, not too much to say that twenty-five per cent. of the stock bought is not sold, and is a total loss, and it is easily possible on many days to have half the stock represented in flowers aggravatingly removed from freshness. Roses, bright-colored and deliciously fragrant, which would furnish delightful home decoration for several days, are stored in the ice-box at the close of a day only to be just too widely blown for the next day's trade. At their best, roses and Bermuda lilies are the longest keepers, and may be successfully carried three days, while heliotrope withers and blackens in a day, and the welcome fragrance of violets becomes a death-like and offensive odor after from twelve to twenty-four hours, though their color is still clear and bright. The resentment against paying what seems exorbitant prices is, perhaps, directed more generally against violets than any other particular flower, their quiet unobtrusiveness making the price all the more startling. But these modest little flowers now cost the retail buyer $2.00 a hundred, and it is a good business day that sees his stock of them exhausted, and anything short of this means actual loss. For example, four small bunches left over represent $8.00 of lost capital. The critical selection of the customer leaves a dozen to twenty roses and carnations out of every hundred to be sold in a lower grade for less money, and a few lilies out of every twenty-five are sure to be bruised and, of course, made worthless whenever they are handled. All this signifies that one hundred per cent. advance in price means a much smaller profit than these figures imply. Indeed, the perishable nature of flowers makes them more uncertain than almost any article of commerce. Even the most delicate fruits and hot-house vegetables can be held over in cold storage and their appearance be preserved until they are to be eaten—that is, they do not need to be kept for a long time after they are sold, simply for appearance sake—while the duration of the beauty of flowers is their essential value.

One of the most important conditions for success is the judicious selection of stock as to variety and quantity. Twenty years ago Safrano, Bon Silene and the old white Lamarque roses constituted almost the entire variety of this class of flowers, whereas now of pink varieties alone the dealer is obliged to have at least half a dozen Tea roses and nearly as many Hybrids. Although customers do not know the names of the different roses, yet they know the distinctions of shade and form between Mrs. Pierpont Morgan, Belle Siebrecht, Madame Cusin and Bridesmaid, and insist on being precisely satisfied. If the desired variety is not on sale, telephone and telegraph are at once brought into requisition, with the result that these special flowers cost the dealer more than he receives for them. Cases like this are aggravated by the short notice now given to dealers. Formerly several days were allowed for the filling of a moderate-sized order, but now a florist must be equipped to complete the decorations for a sumptuous entertainment in a few hours. In the matter of color modern taste has come to be very exacting, since great

care is taken to select flowers of a tint which will be in effective harmony or contrast with the other decorations of a room or a table, or of a gown. Even in white the flowers must match the exact tone, whether ivory or cream or pearl, and samples of dress materials are often sent to the florists with orders. To meet these demands the larger stores are compelled to have a superintendent, skilled bouquet makers and buyers who command large salaries.

The cost of material given away nowadays would almost have paid the expenses of an ordinary flower store a quarter of a century ago. Boxes which cost fifty cents each, ribbons where cotton cord was formerly used, expensive lavender-colored tinfoil, fine papers of various textures, corsage pins, and the greens which are used for filling amount to a round sum in the course of the year. Twenty years ago a ball bouquet was made of Bon Silene roses and Ground Pine, and the regulation price of five dollars left a fair profit for the dealer. Now a bunch of choice loose flowers costs twenty-five dollars, because no culls can be used, and only perfect long straight-stemmed flowers. Where Geranium leaves were once acceptable for foliage, modern taste demands the use of expensive fronds of Adiantum and Asparagus. Then it should be remembered that the season in this city begins with the week of the Horse Show and ends with Easter, with many breaks caused by holiday visits to country places and to the south, so that whatever money is made in the year must be made within a comparatively few weeks. This necessitates for a part of the year long hours and hard work for many employees, with no holidays.

All this means high prices for the most fashionable flowers, and yet the business is making a steady and healthy growth. More flowers are sold every year, and more growing plants are used for decoration. As a general rule, too, the popular taste is becoming more refined, and not a few of the retail dealers are exerting a wholesome influence in this direction.

New York. *M. B. C.*

Trees of Minor Importance for Western Planting.—I.

THE Kentucky Coffee Tree, Gymnocladus Canadensis, has not received the attention it deserves in ornamental planting in the United States. It is indigenous as far west as central Kansas, to my knowledge, and grows thriftily and with comparative ease even on dry upland. It is not difficult to handle in the nursery while young. The tree has in all stages of growth picturesqueness and charm. Its foliage is beautiful, and while it gives a distinct variety in the foliage-texture of any planting, it is not so conspicuous as to appear obtrusive, nor does it bring any note of disharmony to the composition. In winter, after the foliage is shed, the large, dark seed-pods persist, adding to the picturesqueness of the gray branches and making altogether such a piquant effect as an artist might long seek for. The tree is sound and healthy, and not subject to insect attacks, so that I am at a loss to understand why it is not more frequently used. Some twenty-year-old specimens recently examined in McPherson County, Kansas, have a height of twenty feet, and have been bearing seed for eight or ten years.

The Honey Locust, Gleditschia triacanthos, is native to pretty much the same western situations as the Coffee Tree, which it resembles in more points than one. Though the foliage is not so compoundly pinnate as in the Coffee Tree, it is much finer and gives an even more emphatic touch of shimmering tremulousness to the masses which it composes. This effect is much heightened by the glossy surface of the leaves, which reflect the sunlight at every movement, and this becomes more important in a country which has twice as much sunlight in a year as New York state. This tree thrives throughout Kansas and Oklahoma in almost all situations in which any other trees grow, though it is, perhaps, a trifle shy of the drier uplands. I have seen many handsome specimens in several western states. It is said to be attacked sometimes by borers, but I have never had evidence of serious trouble on this score.

The American Elm was omitted from my notes of western timber-trees in GARDEN AND FOREST, December 18th, 1895, because I have not seen it planted for timber. For ornament, and especially for streets, it is a great favorite in the west, though its popularity has, I think, been somewhat declining in recent years. The young trees are grievously worked by borers in many cases. I especially noted several hundred large nursery-grown trees along the streets in Norman, southern Oklahoma, which had been totally destroyed the first year, with hardly a single exception. The long, slender, exposed trunks of these trees, however, offered an unusually fine harbor for the insects. Lower-headed trees with cleaner bark should be chosen for planting, and it seems as if some other defensive measures might be adopted.

At Oklahoma City, Oklahoma, I also noted Tea's Hybrid Catalpa used as a street-tree. The trees had only recently been set from not very good stock, and so gave small opportunity for judgment; but, so far as my observations went, they helped to confirm a prejudice which I had already formed against all Catalpas for street-trees.

The American Ash has sometimes been used as a timber-tree in the west, and has, I think, been carefully tried in the well-known plantings at Farlington, Kansas. I have never seen it much used for any purpose, and the only really satisfactory record of it which I have ever made is taken from several trees which came up from seed as undergrowth in a planting of Ailanthus, Catalpas and Cottonwoods in a timber-claim in McPherson County, Kansas. In this situation they did well, and when examined a few months ago were good, straight trees of eighteen or twenty feet high. They are now twelve years old. I have once or twice seen them planted in solid blocks, without shade, in timber-claims, but I never saw them successful under such treatment. I remember also a close planting of Ash in blocks on the Kansas Agricultural College farm, and my impressions of their success as a forestry venture were not flattering; but for good reasons they had not come under such systematic and sympathetic treatment as might have developed a better showing. This Ash is also sometimes used as a street-tree, but nowhere with great success, so far as my observations have gone.

Maples have been extensively used in western towns as street-trees, the Silver Maple being in a large majority. In some places public squares have been planted with them, and the result is generally entirely satisfactory. All things considered, it is probably the best street-tree for the west, though it has its faults, to be sure. Some seasons it is quite defoliated by a lepidopterous larva, which adds a considerable unwelcomeness of its own to the unsightliness of the naked trees. But these ravages do not occur every year, and some of the people who, a few years ago, cut down fine large Maple-trees on this account were undoubtedly hasty.

University of Vermont. *F. A. Waugh.*

Foreign Correspondence.

Gleichenias.

WHEN well grown the Gleichenias form handsome specimen plants. They are among the most attractive of the Ferns cultivated in the cool fernery at Kew, where the conditions as to temperature, moisture, etc., appear to exactly afford their somewhat special requirements. This house is one of the most recently erected; it is built of light iron, with wood sashes, the panes of glass ten inches wide, the roof span-shaped, with a lantern ventilator, the position being from north to south. A central stage and two side stages, the latter a yard from the roof, formed of thick slate, resting on an iron frame and covered with small coke, accommodate a collection of all kinds of Ferns which require a minimum temperature in winter of from forty-five to fifty degrees. I describe the house because it is the first of those at Kew set apart for Ferns that has proved suitable for Gleichenias.

Three years ago a collection of species and varieties of Gleichenia, at that time only a few inches high and planted in four-inch pots, was obtained for this house. These plants are now each from three to four feet in diameter, their stem-like fronds interlacing and forming a thick bush of elegant green, prettily crimped pinnæ.

The treatment these plants have received is as follows: They are potted in a mixture of peat, silver sand and nodules of sandstone in shallow pots or pans. The soil is pressed firmly about the roots, and any straggling rhizomes pegged down close to the soil. Plenty of water is given at all times, and this is perhaps the chief essential in the cultivation of Gleichenias. If a plant has lost fronds, turned brown, or made stunted growth, it has proved to be due to insufficient watering. I have been told by travelers that Gleichenias generally grow in sunny, dry situations in countries where they are wild, but I know from experience that under cultivation they do not like bright sunshine, and they revel in moisture at the root.

Gleichenias are remarkable in the structure of their fronds, in which respect they resemble the Lygodiums, several species of Davallia and one of Gymnogramme. The true stem is a creeping rhizome from which spring the fronds, which have wiry stalks, generally dichotomously branched many times, and bearing numerous elegant, deeply cut, pinnatifid branches or pinnæ. These are what are usually looked upon as the fronds proper, the long wiry portion being popularly supposed to be stems. The sori are capsular, in cups formed by the usually reflexed edges of the ultimate divisions or teeth of the pinnæ; they contain few spores, which are matured on cultivated plants and are used for their propagation. Beginners are apt to collect and sow only the spore-cases after the spores have escaped, which they do at an early stage. The pinnæ should be collected when the capsules are green and plump, and kept in paper in a dry place till the capsules burst and release the spores. They should be sown in pots of very sandy peat and covered with a pane of glass. Although the wiry growths are really the stalks of the fronds, they may be used for the purpose of multiplication, as they frequently bear axillary buds. A stock of plants can be obtained by planting a specimen in a prepared bed of sandy peat and pegging down the fronds, especially fixing the apical fork close to or a little below the surface of the soil. Many Ferns have proliferous or bud-bearing fronds, the most familiar of all being the Aspleniums of the bulbiferum type.

Gleichenias may be grown into very large specimens. I have seen them fully six feet in diameter and as leafy and healthy as a well-grown Asparagus plumosus.

There are about thirty species of Gleichenia scattered widely over the tropics both of the Old and New World, extending into Chili, Australia, the Cape, etc. Some of the handsomest, especially of the truly tropical species, have not yet been introduced into cultivation, although many attempts have been made. The following are cultivated at Kew and in other gardens in England:

G. circinata.—Rhizomes covered with black-brown scales; stalks of fronds brown, clothed with gray wool; pinnæ (fronds) six to eighteen inches long, dull olive-green above, silvery below; the segments linear, one to three inches long, one-eighth of an inch wide; the teeth rounded, flat, or forming shallow cups in some of the varieties, of which there are five at Kew, viz., Backhousiana Mendelii, semivestita and Speluncæ. These are all natives of Australia and New Zealand and have long been in cultivation.

G. dicarpa.—Rhizomes nearly glabrous; stalks brown, hairy only when young; pinnæ bluish green, the segments very narrow and divided into numerous very small rounded teeth, the margin of each of which is recurved and forms a small purse-like cavity, which is partly closed with fine rust-colored hairs. This character distinguishes dicarpa from all the other species. The varieties of it grown here are alpina, glauca and longipinnata, all natives of Australia and New Zealand.

G. dichotoma.—The stalks of this species are thin, somewhat zigzag, hairy when young, smooth and shining brown when old; they are dichotomously branched, each pair of pinnæ being subtended by a pair of smaller in the axil or fork, from which springs the continuing stalk. The pinnæ vary in length from six inches to a foot, and in width from one to six inches; they are not unlike the fronds of a Nephrolepis. This species is usually unsatisfactory under cultivation, but at Kew it grows well under the conditions above described. It is quite distinct from all other Ferns. It occurs in all tropical countries, and there are numerous forms of it.

G. flabellata.—Rhizomes as thick as goose-quills, olive green, clothed with black hairs; stalks erect, smooth, dark brown, unbranched for some distance, bearing a cluster of repeatedly forked pinnæ about nine inches long, flabellately arranged, more or less parallel and gracefully arched; the teeth are half an inch long, shining dark green. There is a large specimen of this very striking Fern at Kew. It is a native of Australia and New Zealand, where it sometimes forms masses many feet through.

G. rupestris.—Stalks of fronds thin, wiry, glaucous when young, smooth; pinnæ as in G. circinata, but with thicker, rounder teeth, and always quite flat; they are glaucous green above, silvery below. Var. gigantea has the segments nearly a quarter of an inch wide and is a noble Fern; var. glaucescens is more distinctly glaucous than the type. Native of Australia.

London. *W. Watson.*

Plant Notes.

Leucothoë Catesbæi.—Certainly few people can realize the winter beauty of this shrub or it would be more often seen in northern gardens. The flower-buds are developed in autumn in the axils of the persistent leaves of the year, and are formed like elongated pointed cones, about half an inch in length, with closely imbricated scales. As the weather grows cold the scales turn deep red, the same color suffusing in a slighter degree the ends of the zigzag stems and the upper leaves, and their petioles, vigorous young branches and their leaves being often as richly colored as the flower-buds. The lower leaves for the most part retain their brilliant lustrous green color, and the contrast between the upper and lower parts of the plant only adds to its beauty. Leucothoë Catesbæi is a shrub with recurving stems from three to six feet in length, persistent, tapering thick and leathery leaves, and short spike-like racemes of nodding waxy bell-shaped flowers. It is a common undershrub in the region of the southern Alleghany Mountains, where, from Virginia to Georgia, it inhabits the moist banks of streams, usually growing in the shade of trees. It was one of the earliest of the Appalachian plants cultivated in Europe, and English gardeners soon learned its value. It has always been propagated in English nurseries, but in this country has remained comparatively rare in gardens. It flourishes in damp situations and in peat soil, growing equally well in the shade and in full sunlight and is beautiful throughout the year. When it is desirable to unite the margins of a plantation of evergreen trees or large shrubs with the ground, or to plant the shaded banks of a brook flowing through a rocky gorge, there is no better plant for the purpose than this Alleghany shrub, which possesses a constitution that enables it to bear uninjured the severe climate of New England. All the North American Leucothoës, of which half a dozen are distinguished by botanists, are first-rate garden plants; and they are all easy to cultivate with the exception, perhaps, of the beautiful Leucothoë Davisiæ, which inhabits the high Sierra Nevada of California and has not yet been satisfactorily tested in our gardens, although it was introduced into England as long ago as 1853 by the collector Lobb. Like many other California plants, however, it is difficult to manage in the east, and probably will never become a popular garden plant here.

Fig. 3.—Bridge over the Kent at Levens Hall.—See page 22.

Cultural Department.

About Currants.

THE marked development in recent years of the interest in currants as a market fruit has naturally been accompanied by the introduction of many new varieties and some old varieties under new names. The newer candidates for favor include the Eclipse, North Star, Red Cross and Wilder of the red kinds, and Marvin's Seedling, Caywood's Seedling and White Versaillaise of the white kinds, and several other sorts. None of these have been fruited here long enough to determine their productiveness.

North Star, introduced from Minnesota, makes a vigorous upright or somewhat spreading growth. The color of the fruit is much like that of the Red Dutch; bunches medium length; fruit probably large under good cultivation, but varying from small to large. Red Cross, from seed of Cherry fertilized by White Grape, was originated by the originator of Brighton Grape. The fruit is medium to very large, milder-flavored and lighter in color and somewhat later in season than Cherry. Habit of bush, upright, vigorous. Eclipse is a good grower and bears bunches from two and a half to three inches long. The fruit varies from small to large; color good, somewhat lighter than that of Fay; flavor comparatively mild. Wilder, from seed of Versaillaise, originated about eighteen years ago with Mr. E. Y. Teas, Irvington, Indiana. It is a good grower, bearing fruit medium to very large, less uniform in size than Fay, and somewhat lighter in color. It appears to be worthy of extended trial as a late kind.

Among the red Currants that have been in full bearing at this station during the last three years, Cherry has been one of the most desirable of the large-fruited kinds. Fay yields longer bunches and more uniformly large fruit than Cherry, but it does not make as satisfactory a bush, nor has it been as productive in this locality as the Cherry. Neither of these kinds will remain on the bushes in good condition for shipping as late as will Victoria, Prince Albert or Wilder. On account of its thin skin and abundance of fine-flavored juice, Cherry is liked at fruit-preserving establishments for making into jam, but it is necessary to evaporate away more of its juice in making jelly than it is with some other varieties. Fay and Prince Albert are especially liked for making into jelly, because of their large size, thin skin and rich pulp.

Prince Albert is a vigorous grower, more upright even than Red Dutch. When well grown the fruit will pass for large. Of all the varieties in full bearing here during the last three years it has given the highest average yield, and London Red, also known as Short-bunched Red, has taken second place. The London Red, like Cherry, has short clusters, with stem so short as to make it difficult to pick. The fruit varies from medium to large and is similar to Red Dutch in color and quality. One of the most valuable of the kinds that produce medium-sized fruit is Victoria, also known in Canada as Ruby Castle or Raby Castle. The bush is a very strong grower, upright and very productive. The cluster of well-formed buds at the end of the shoot, the bluish gray color of the buds and the rather pale green foliage are quite characteristic of this variety. The clusters are of good medium length. The fruit is late in coloring, has a bright red color, and will keep on the bushes in good condition later than either Cherry or Red Dutch.

The market demand for white currants is quite limited, and the number of new white varieties is not so great as the number of newly introduced red sorts. White Grape and White Dutch still remain the standard sorts. White Imperial has not yet fruited here. Caywood Seedling is a very productive white kind, with spreading or drooping branches. The fruit is large, attractive and of good quality. Marvin's Seedling is similar in color to White Grape, larger in size and rather more acid. White Versaillaise has long, well-formed clusters slightly darker in color than White Grape; berries larger, less juicy and about the same in acidity as White Grape.

Geneva Experiment Station, N. Y. *W. P.*

How to Grow Peppers and Egg-plants.

THERE are few vegetables which so often disappoint growers by failing to produce fruit as Peppers and Egg-plants. It seems to be an easy matter to grow plants which by the last of August are large and vigorous, but in many cases only an occasional plant is productive. Conditions of soil, climate and culture might cause such failure, but I think it is most often the outcome of little-understood peculiarities of Solanaceous plants. The Tomato, Egg-plant and Pepper are annuals and natives of a tropical climate. The seed does not start until the growing season, and then the plants have the advantage of a uniformly favorable degree of moisture and heat, in which they grow rapidly and steadily from the starting seedling to the ripening fruit. This is their normal habit of growth, and any interference with it is sure to result in less perfect development and fruitfulness. A temporary check, which would have no permanent influence on Peas, Beans or Lettuce, will materially lessen the fruitfulness of a Tomato, Pepper or Egg-plant, even though it does not lessen its ultimate size and apparent vigor. I could give details of experiments which go to prove this fact, but readers will recall instances where a single volunteer Tomato-plant which sprang up after the started plants were set, and in the favorable weather grew steadily without check, was noticeably more productive, though no larger, than those that were transplanted. If individual plants of Egg-plant and Pepper are noted, those which have grown most steadily and been least checked in transplanting will prove the most productive plants. The practical lesson of these observations is that the utmost care should be taken in starting plants of this class to secure steady and unchecked growth.

Sowing the seed should be delayed until there is just time enough before setting the plants in the open ground for the seedlings with a moderate rate of growth to reach the size most desirable for handling and transplanting. Special care should be taken to so control light, heat and moisture as to secure the steady growth of the plants. To start the seed so early or grow the plants so rapidly as to be forced to hold them back or let them get soft and spindling through want of room is sure to result in a poor crop of fruit, no matter how promising the plants look in July. The ground should be well prepared and so fertilized as to give the plants a well-balanced food ration, and the plants set and the ground cultivated so as to avoid, as far as possible, the least check in the growth of the plants.

Detroit, Mich. *Will W. Tracy.*

Freesias.

AMONG winter-blooming plants which furnish flowers for cutting few equal in usefulness or popularity these Cape bulbs. Within the last few years the price of flowering bulbs has been so much reduced that they are now sold at very low rates, and no one possessing a greenhouse can afford to be without them; we have seen very good pots and pans of them grown in windows where the temperature has not been too high. A great many house-plants are ruined by heat, and Freesias are impatient of high temperature until their flower-spikes show, when they will endure a little forcing. If opened in strong heat, however, the flowers lack the substance of those grown cooler, and they fade sooner.

For our earliest batch, from which we usually begin to cut flowers at Christmas, we plant our bulbs about the middle of August, using boxes four inches deep, well-drained with broken crocks or clam-shells, over which is placed a layer of sphagnum-moss. The compost used consists of equal parts of loam, leaf-mold and well-rotted cow-manure, with a good dash of sharp sand and some pulverized charcoal to keep the whole porous. A box twenty-four inches by twelve inches will carry fifty bulbs. These are covered two inches deep with the compost; after being boxed a good watering is given and the boxes are placed on a bed of ashes in a cold frame and covered with some strawy manure to prevent the drying out of the soil. As soon as the young shoots appear this covering is removed; the sashes are only used over the plants to throw off heavy rains, and, later in the season, to protect from frost; the more steadily the plants are kept growing the better will be the returns at flowering time.

We house these first lots early in October, and place the boxes on a shelf in a Carnation-house close up to the light. From the beginning of November until the flowers commence to open, stimulants are applied at each alternate watering. We find sulphate of ammonia and sheep-manure water the best liquid foods, and we use these almost as strong as for pot Chrysanthemums. Freesias, if well grown, should average from twelve to twenty inches in height when in bloom, with four to five side branches on each spike; the starved specimens too often seen average from six to nine inches in height, and are ruined by too much heat, being grown too far from the glass and in too poor compost.

By putting in a few boxes of bulbs each month from the middle of August to the middle of November a succession of bloom may be had from Christmas till Easter. We hold our late batches in a cold frame until Chrysanthemums are quite over. Freesias increase about three-fold each year, and home-grown bulbs, we find, produce much finer flowers than

the larger ones from California. After the flowers are cut we place the boxes under the benches and gradually withhold water. About the middle of July we shake the soil out and pick the bulbs out in two sizes; the smaller ones, like garden peas, are sown broadcast, rather thickly; these make fine flowering bulbs for the next season. For use in the conservatory, Freesias grown in pots or pans are very effective, their delicate odor and free-flowering properties making them indispensable. By sowing seed in pots or pans and thinning them out (as the seedlings cannot be successfully transplanted) good flowering bulbs may be had the second season, but bulbs of good quality are now so cheap that few go to the trouble of raising them in this way. Freesia refracta alba is the most largely grown and popular of the three sorts in commerce. F. Leichtlinii, with creamy yellow flowers, may be added; stray bulbs of it are usually to be seen mixed in with those of F. refracta alba.

Taunton, Mass. *W. N. Craig.*

Oxalis versicolor.

THE trouble with most of the species and varieties of Oxalis lies in the fact that their flowers remain closed for a considerable portion of the day; especially is this the case in midwinter, when some of them only open in clear sunny weather. Few of the species are very attractive unless they are in full flower. The species known as O. versicolor, however, is a notable exception to this rule, as the flower-buds and closed flowers are quite as attractive to many people as the fully opened ones. The petals, when closed, are so arranged that they overlap each other to a certain extent, the overlapping edges of the under surfaces being a reddish pink color, and the remaining part white and greenish yellow at the base, and this combination of color in the closed flower makes it very attractive. When expanded the flowers are about an inch in diameter, and upper surface of the corolla is pure white. This species is not of robust growth; the leaves, which are small and divided into three linear leaflets, do not spring directly from the bulb; long slender stalks are first produced, which form bunchy growths at the apex, from which spring an astonishingly large number of leaves and flowers. The plant is particularly well adapted for planting in baskets, as the branches hang over the sides. It begins flowering here about the middle of December, and continues for at least three months; this is in a house where the temperature is kept just high enough to prevent freezing. The pear-shaped bulbs are small, and in starting I set them singly in thumb-pots, using peat loam and sand in equal parts. When the growths are an inch or two high they are transferred to baskets lined with sphagnum-moss, when a richer soil is used, and in this they are planted rather closely.

Botanic Garden, Washington, D. C. *G. W. O.*

Notes from Harvard Botanic Garden.

IN a greenhouse here, where the temperature ranges from forty to forty-five degrees, there is a showy group of plants of Senecio Petasites which invites special attention. This plant is an old inhabitant of gardens, having been grown for more than three-quarters of a century, but it is seldom seen now. It is of special value at this season for those who have large conservatories to be kept gay during the dull months of winter. The plants are seldom kept more than one year, but if large specimens are desired the old plants may be cut back late in spring, and when the weather is favorable in early summer they may be planted out in the garden. They need plenty of room, as the old branches soon break and make large handsome specimens. Cuttings struck in spring make the most useful plants for us. When the plants are through flowering one or two are kept for stock plants. They are cut back, and in a few weeks they make young shoots, which make the best cuttings when they are three or four inches long. It takes them about two weeks to make good roots in the cutting-bench. After they are well rooted they are put into three-inch pots, and in May they are planted out in the garden. They soon begin to grow, and about the first week of July they are cut back so as to make them branch. They generally make three or four stems, but those stems are never cut back during the remainder of the season. If extra-large panicles are wanted, the young plants should be grown to a single stem. Just before there is danger of frost the plants are lifted, and are large enough now for eight-inch pots. As they are gross feeders they need a rich compost, and before they blossom weak liquid-manure is very beneficial.

This Senecio is a stout, erect plant with round stems, which attain a height of three or four feet or more. The stems are clothed with large circular leaves, which are cordate at the base and dark green above and paler beneath. The leaves are from six to twelve inches broad, and their petioles are nearly a foot long. The large terminal panicles measure a foot and a half in length and are developed in November, but the flowers do not open until the second week in December, or sometimes later. The flower-heads measure more than an inch across, and the color of the disk florets are brownish, and those of the ray are of a bright yellow. When the plants are in full bloom they are very attractive, for not only are the flowers showy, but they are also fragrant. It is a Mexican plant, and when first introduced was known as Cineraria Petasites.

Half a dozen large plants of the showy Cestrum elegans are blooming freely now in pots. These plants make handsome objects when planted out in a bed or border in a cool greenhouse and trained to a pillar. In such a position, if properly treated, they blossom nearly all the year round. Two or three year old plants, grown in pots, we find most serviceable, as they branch more freely and are more graceful than younger plants. The season of blossoming of plants grown in pots is regulated by the time the plants are rested and pruned. When they are through flowering we find they do much better after a long rest. This rest is brought about by withholding water, and it helps to ripen the soft wood. In June they are pruned close to the old stem, leaving only one or two buds of the previous year's growth. They are then turned out of the pots, and after most of the exhausted soil is removed they are planted out in the garden. If syringed regularly they soon make young branches, and their naked and ragged stems are soon hid with green leaves. When they are taken up in the fall they need plenty of pot-room and good rich soil. They begin to blossom in December and continue for two or three months. The purplish red, tubular flowers are produced in dense terminal cymes on long, graceful branches a yard or more in length.

Eranthemum tuberculatum is a handsome species introduced from New Caledonia in 1863. At this time its pure white star-like flowers, which are about one inch across, are produced plentifully on the thick, bushy plants. They are about a foot high, branching freely into slender twigs which are thickly covered with small oval leaves. This Eranthemum is grown as a stove plant here, and after blossoming it is cut back and kept slightly dry for a short time. In spring it is potted in a rich open soil and the plants are placed afterward near the roof-glass, which induces them to make short, healthy growth. Cuttings made from the young growth root easily if given slight bottom heat, and they soon make nice little plants if given good treatment.

Botanic Garden, Harvard University. *R. Cameron.*

Ardisia crenulata is one of the prettiest of all berried plants for winter decoration. The berries are vermilion-red, and one crop holds over until another is ripe, so that it is an available plant at all seasons. It is a shrub of very slow growth, taking four years to make a specimen a foot or eighteen inches high. This is the most useful size, since the plants afterward become leggy and need cutting down and restarting in fresh soil in slightly smaller pots. They are easily raised from seed, and usually enough self-sown seedlings are found under the benches. Ordinary greenhouse temperature is sufficient after the fruit is set, but during the blooming season a slightly higher temperature is advantageous in securing a good setting of berries. Good peaty soil and firm potting is essential, as the plants will remain in good condition for two or three years in the same pots. The plants are subject to scale as a pest, and it is only by frequent syringing with a decoction of tobacco-water and fir-tree oil or kerosene emulsion that they can be kept clean.

Wellesley, Mass. *T. D. H.*

Reinwardtia trigyna.—This good old plant is now a blaze of beauty in the warm temperate house. It is rather remarkable that one so rarely meets with this plant either in private or commercial collections, yet it is just upon one hundred years since it was first discovered and sent to England. It is a sub-shrub, though it perhaps is best to take cuttings each year (unless large specimens are wanted) and throw away the old plants. The leaves are ovate, entire, and about one inch in length, alternately disposed on the branches. The flowers are of a rich golden yellow, about the size of a silver dollar, solitary in the axils of the leaves in the lower parts of the branches, but crowded at the upper ends of the branches. The petals are fugacious, which is the only drawback to the commercial

use of the flowers, but the large quantity of buds keeps the plants in bloom several weeks. It belongs to the family Linaceæ, and is also known under the name of Linum trigynum. It is interesting botanically in that it has three pistils, as its specific name implies, which is rather uncommon in dicotyledonous plants. Cuttings rooted in February and planted out during the summer in the open ground, kept watered during dry weather and pinched occasionally to keep them shapely, will make nice plants by fall, when they may be lifted and placed in a warm greenhouse, where they well repay the little trouble spent on them. It is a native of the mountains of the East Indies.

Northampton, Mass. *Edward J. Canning.*

Correspondence.

The Prospects for California's Orange Crop.

To the Editor of Garden and Forest:

Sir,—Unless some unexpected calamity should destroy the orange crop of California, the state will send to market this year the finest and largest crop of this fruit ever gathered here. The output is estimated at ten thousand car-loads, two thousand car-loads in excess of any previous year, and comprising three million boxes. At $3.50 a box in the east, their value will be ten and a half million dollars, approximating the gold production of California for 1894, which was about thirteen million dollars.

Shipments of last season's oranges to the east continued until late in the summer. During the week ending May 9th, 224 car-loads left Riverside, the largest shipment ever sent from any one place during the same period. The first car-loads this year went from Porterville and Oroville, in the northern part of the state, a region which has been growing oranges for some years in but small quantities. It is evident, however, that the northern Citrus belt, of which Butte County is the centre, will prove a strong competitor for early shipments and high prices, with the larger and better-known orange-growing districts more than five hundred miles to the south. Riverside sent the third car-load of oranges east this year, and Redlands the fourth. These shipments were at least three weeks earlier than the first shipments of last year. The ruling price here has been $2.50 a box. These early oranges answer for Christmas decorations, but they were not fully ripe and not really fit to eat. No California oranges are at their best before the first of February, and, as far as establishing a permanent demand is concerned, these early shipments do more harm than good.

A vigorous effort will be made this year to market the California fruit to the best advantage, and to market it all. For this purpose the Southern California Fruit Exchange endeavored to secure control of the entire crop. The growers are naturally anxious to make the most of the absence of Florida's competition, and the Fruit Exchange, which handled about half of the orange crop last year, argued that the best way was to form a combination of all the growers in southern California, and practically to control the markets. This exchange has a central executive board, composed of representatives from eight subordinate exchanges. Its plan is to have representatives in each distributing centre of the east to watch the markets, to see that they are all fully supplied and that none are overstocked. Orders are subject to the supervision of the executive board, and shipments are to be made on a pro rata basis. That is, if the market at any given time is estimated to demand, say, two per cent. of the total crop, each district forwards two per cent. of its crop. Provision is made for meeting undesirable foreign competition by cutting prices, the consequent loss to be prorated among all the exchanges. In brief, this is a daring plan to control the marketing of a perishable product, which is not uniform in quality, like oil or sugar or coal, and the market value of which has always been determined by a number of uncertain factors. The extension of this work through the year, so as to include the shipments of green and dried deciduous fruits, has also been contemplated.

As oranges are a luxury, there can be no arbitrary fixing of the price, but it was urged that systematic coöperation among growers would develop new markets and obtain a foothold among the old ones. The possibility of this was shown by the successful work of the exchange last year, after the Florida freeze, in forcing the California fruit upon the markets of New York, Philadelphia and Baltimore. The necessity of such coöperation was argued from the fact that the growing orchards of California will, in the near future, produce from 15,000 to 20,000 car-loads of fruit a year, the consumption of which will demand an active representation in all the markets of the United States. This would amount to four and a half to six million boxes, the latter amount being the estimated Florida crop which was destroyed by frost last year. California expects competition from Florida as soon as the latter state can grow new orchards. Land in Florida is cheap, and the probabilities are that growers will set out new orchards and take their chances of the weather.

These facts are understood in California, and certainly made a strong argument for coöperation. The plan, however, failed of support. The friends of the exchange claim that they will ship this year about sixty per cent. of the entire crop of the state. Its opponents state that not more than forty per cent. will be handled by it. There are several principal reasons for the partial failure of this plan. The first is the competition between localities in southern California. The quality of the fruit grown here depends upon climate and soil, which vary to an extent that an eastern man can hardly understand. The principal orange-growing region of southern California is within a belt not more than one hundred miles in either direction, and within this territory there is a wide diversity of climate. The best oranges are grown in the interior, away from the fogs and dampness of the ocean, and at an altitude of from one thousand to fifteen hundred feet. The fruit reaches its perfection in the San Bernardino Valley, where the heat in summer is sometimes oppressive and where even the winter climate is very warm. Here are grown the fancy Navel oranges, which, in the absence of the best Florida oranges, will be the finest fruit of the kind that can be procured this year. These oranges are in demand wherever they are known, and many growers are unwilling to place them in any prorating or pooling arrangement with inferior fruit. Some of the younger orange-growing localities are in better position in this respect than the older ones, because they profited by the experience of the latter in regard to the varieties which they planted, with the result that the seedling and inferior varieties were almost entirely discarded.

A second consideration was that the exchange method practically does away with f. o. b. (free on board) sales. The price is determined by the executive board in the west and by the several agents at the principal distributing points in the east. The judgment of the latter is also final as to whether a car-load of fruit ordered for any particular market shall be forwarded to that market or not. These are distinctions which might work against the growers of the finest fruit. If the theoretical plans of the exchange could be carried perfectly into practice there might be no discrimination, but it is hard to convince the grower of the best fruit that he will not suffer from coöperation with growers of fruit of a less desirable quality. Probably not more than one-fourth of the oranges sent from California this year will be strictly fancy Navels. Many growers of Navel oranges believe that they can sell them to responsible dealers and can know before the car goes forward what the price is to be, an advantage which they are naturally unwilling to abandon.

In former years the orange growers of California have suffered greatly from the dishonesty of middlemen. Sometimes no returns whatever would be made on shipments and no attention would be paid to correspondence. Sometimes the broker would pocket the proceeds, if any, and draw upon the producer for the freight. The despair and exasperation of an orange grower who has produced his fruit upon land representing an investment of a thousand dollars an acre and shipped it to market two or three thousand miles, can be imagined under such circumstances. When complaints were made and the dealer could be found, there was always the excuse that the fruit was in bad order, and, as it had long since disappeared, there was no way of verifying or disproving his statements. Such extreme instances as these have been less frequent for the past two or three years than formerly; but it has been a common thing for a dealer to reject a car, after he had ordered it by telegraph, if he found, after making the contract, that he could do better as regards quality or price. The agents of the exchange will be on the ground to look after such matters as these. They will know whether fruit reported in bad order was really so, and dealers who violate their contracts will be blacklisted, on investigation, and thus be prevented from repeating fraudulent transactions. Moreover, reputable dealers will be protected from the competition of men who do not pay for their goods or do not carry out their contracts. The exchange will guarantee the quality of all the fruit which it sells, and this fact will necessitate a similar guarantee on the part of all other shippers.

California growers confidently believe that their oranges

will take precedence as regards quality over all importations from foreign countries. The results of the present season will be watched closely and will have an important bearing upon the future of an industry which represents millions of investment.

Redlands, Calif. *Wm. M. Tisdale.*

Meetings of Societies.

THE twenty-first annual meeting of the New Jersey Horticultural Society was held in the State House in Trenton last week, and it was very successful in point of attendance, in the character of the discussions, and in the display of fruits. In the course of his report, the secretary, Mr. Henry L. Budd, stated that the fruit farmers of the state, although they had much to complain of, came out ahead of their brethren, the value of the apple crop alone being greater than that of the general field crops. The great importance of frequent tillage had been made more manifest during the year than ever before. In former years fruits have been so abundant without cultivation that it had come to be an accepted truth that orchards in sod-ground are as profitable as those which receive frequent tillage, but this year experience and observation both showed that every cultivated orchard in the state yielded better where the soil was stirred as often as once a week and not allowed to become compact, so that the moisture could rise to the surface and pass into the atmosphere by evaporation. Over a large part of the state no moisture fell for ninety days, and the value of frequent surface-tillage was evident, especially in the Corn fields. Under ordinary cultivation the crop did not reach more than fifteen bushels an acre, while seventy-five bushels an acre were often reported from neighboring fields where the surface had been frequently broken, so as to become a protecting mulch. The struggle with weeds had been largely responsible for teaching this truth, as not one farmer in ten would have tilled his land but for these vigorous schoolmasters.

Where the products of market-gardens and orchards and vineyards are marketed, and where it is necessary to haul fertilizers to insure crops, the secretary named good roads as an important element in success. When it costs fifteen cents a basket to haul truck over dirt roads and three cents on macadam roads the value of a smooth road is evident. But, besides this, good roads make it possible for the farmer to get to the market when the prices are good, instead of being compelled to wait in spring or after hard rains until the mud dries.

Professor Voorhis, Director of the Experiment Station, explained the experiments going on in regard to fruit and vegetables, and announced as an important part of the work in the near future a study of methods of forcing vegetables and fruit for the early market. The station had been making some statistics of the production of the various fruits for commercial purposes, with the following result for last year: Taking the state through there were 18,749 acres devoted to Peaches, 6,104 acres devoted to Apples, 3,700 acres devoted to Pears, 64 devoted to Cherries, 27 to Quinces and Plums. Of small fruits, 3,926 acres were in Strawberries, 2,847 acres in Blackberries, 1,052 acres in Raspberries, 839 acres in Grapes, 85 acres in Currants, 20 in Gooseberries, making a total of large and small fruits 37,423 acres, to which, perhaps, ten per cent. ought to be added to cover orchards and fruit gardens not reported. The number of fruit growers in the state was 3,058, so that the average acreage of each would be twelve and a quarter acres.

Mr. J. H. Hale, of South Glastonbury, Connecticut, who has had great success in raising peaches, said that he cultivated the ground in his orchard thoroughly and pruned the trees for form until they began to bear, after which he pruned them for fruit. After they had come out in bud he trimmed them, leaving the twigs that had budded. This was a great advantage when the winter had killed part of the buds. This practice sometimes left an ugly-shaped tree, but a very valuable one. After the peaches had formed he pulled off the diseased ones, then thinned out the others until they hung four inches apart. Next year he will thin more severely, so that the fruits will be six inches apart. He fertilized heavily with potash and bone and pulled up a tree, root and branch, at the very first appearance of yellows. He took the greatest pains in picking and handling his peaches to make sure that they were in the very best condition, so that every basket was exactly what it seemed to be, the bottom layer being as good as the top. He then advertised his method and sold his fruit on the reputation for honest packing he had made. He declared that he received fifty cents a basket more by so doing and he felt better by dealing honestly with the consumers.

Mr. Charles Parry thought it was impossible to exterminate the San José scale here in the east, but that we should try to introduce the natural enemies of this insect, as had been done in California. The difficulties in fighting this pest are due to its rapid increase and the difficulty of detecting it. The treatment of the trees with a wash of caustic potash in December and of whale-oil soap in February last year left only a few scales to escape, and he thought another treatment this year would probably finish the work. The trees made a fine growth the next summer, but because of the severe cutting back necessary three or four crops would be lost. The hydrocyanic method as used in California was considered too expensive, if anything else would possibly do, especially as it had to be repeated every fourth or fifth year. He considered the introduction of such predaceous insects as feed on these scales, or of their diseases, the only safety. Some parts of California which were at one time badly infested are now practically free. Of the fifteen hundred species of ladybirds known to science as helpful, one-half eat various scale insects. They will work where a man cannot.

Professor Smith did not consider the case so discouraging. He did not believe that ladybirds could do as much for us as for the Californians, because our damper climate was inimical to them. Then, too, the ladybirds have but one brood a year, thus giving the scales a chance to gain largely on them, both before and after their time. Even in California spraying is still practiced. The action of insecticides is quite different on the Atlantic and on the Pacific sides of the continent. Kerosene emulsion is good here, but comparatively useless in California, though lime and sulphur are effective there. The predaceous insects are worth importing on trial, though fewer of them will be likely to succeed here than in California. Keiffer Pears are only infested in large orchards, though where they are near other varieties they are not liable to be attacked. A good wash can be made of fish-oil, with plenty of caustic potash, the office of the oil being to hold the potash while it eats into the scale. He never knew scales to get from one orchard to another or to isolated trees by any ordinary methods, so he considered the spread of the trouble not likely to be rapid. At Egg Harbor City Apple-trees of four or five years' bearing were infested, but they had been frequently and thoroughly sprayed with Bordeaux mixture, and the coating of lime thus given had kept the scale in check.

Mr. Charles Black, of the Fruit Committee, reported that the Crosby peach was not handsome enough in appearance for this section, but it was good to have when no other tree bears. The Elberta was all that had been claimed for it—one of the best, hardy and vigorous. Lemon Free was reported as a promising late variety. In Strawberries the Cumberland was still valuable on heavy moist soils. Pearson's Seedling, not yet introduced, produced forty crates from a quarter of an acre by the 6th of June. It is good on upland as well as lowlands. The Mary was pronounced very good in Burlington County, but other growers pronounced it a failure the first year, while the second year it was fine, although a trifle soft. Among Potatoes the Carman No. 1 was said to be the best in yield of marketable tubers.

Mr. S. D. Willard thought the Columbus Gooseberry, introduced by Ellwanger & Barry, the most promising large American Gooseberry. It makes good wood, and the fruit is large, egg-shaped, white and free from mildew. The Triumph would not make wood for Mr. Willard in New York, but Mr. Baird said it grew strong in Monmouth County.

Recent Publications.

Thoughts from the Writings of Richard Jefferies. Selected by H. S. H. Waylen. Longmans, Green & Co., New York.

This is a beautiful little book with an artistic cover enclosing some one hundred and twenty-five pages of text in heavy-faced type, red initial letters and with broad margins, and somehow the reader feels that the works of Jefferies should never be printed in any other way. No one would think of putting the robust thoughts of Thoreau in such a dress, but there is nothing robust in this anthology. Sometimes one sees a display of fierce energy, but even this seems more like the exhausting effort of delirium than the manifestation of quiet natural strength. Unfortunately, the genius of Jefferies is not displayed at its best in extracts like these, and the reader who is unfamiliar with his works will hardly get an adequate idea of his real merits. Those who know his writings will relish them because they

suggest the context and recall impressions which are left by entire essays. One closes the book with something of sadness, and, in fact, an hour with Jefferies never has the exhilaration of an outdoor walk, although no one describes what he sees more accurately, and few men ever had more of genuine poetic insight. He lacks, however, the serenity of real greatness, and, although it would be unfair to say that there is anything like querulousness in the tone of his writings, there is a certain discontent as of one who had made a failure in the battle of life and is not ready to accept the situation with patience or subordination.

Notes.

Diseases of Carnations is the subject of a bulletin which will be issued by the Indiana Experiment Station next month. As it is expensive, owing to elaborate illustrations, only a limited edition will be published, and, therefore, Carnation growers who desire to see it should send their names as soon as possible to C. S. Plumb, Director, Lafayette, Indiana.

A newspaper in Denver states that seventy-five acres of ground near that city are covered with glass for growing winter vegetables, such as Lettuce, Radishes, Onions, Spinach and Cucumbers. Car-loads of mixed vegetables, like celery, cauliflower, parsnips, etc., are sent every day to St. Louis, Kansas City and other points to the east.

Mr. Edson S. Bastin and Professor Henry Trimble begin in the January issue of *The American Journal of Pharmacy* a series of papers on the botany, histology, chemistry and economic properties of some of the important coniferous trees of North America. In the first paper, after a general account of the family, which is divided into two suborders, the Pinoideæ and the Taxaceæ, Pinus Strobus, of which the photograph of a branch is reproduced, is described, and the tannin contained in the leaves and bark is determined, 25.7 of tannin being found in the absolutely dried leaves, 9 37 in the dried bark of the stem, and 6.48 in the root bark.

There are a good many complaints about the careless and dishonest packing of fruits in this country, but it seems that growers beyond the sea are not altogether above criticism in this matter. In a paper on the fruit supply of Covent Garden, read before the Horticultural Club in London last month, Mr. George Monro said that he was informed by the proprietor of a large wholesale store in Manchester, where both English and American apples were on sale, that one thousand barrels of American fruit were sold against one hundred bushels of English fruit, and this was simply because the packing of the English apples could not be depended upon—there being no proper selection or grading in the English packages of fruit.

The Lemon growers of southern California think that the fertility of the soil of that state and its adaptability to the production of citrus fruits will enable them to compete with the product of southern Europe in spite of the low price of labor there and the small cost of freight from Mediterranean ports. It is not expected in Lemon-producing districts of Europe that a tree will fruit before the sixth or seventh year, and it will do well if it yields three boxes of fruit the tenth year. In California a Lemon-tree is expected to pay expenses the third year, and it should yield from five to ten boxes of fruit in the sixth year, while it is not an exceptional occurrence for trees ten years from planting to produce twenty-five or thirty boxes of fruit.

Rhubarb, forced in cellars, is already in our markets, a dozen small stalks selling for fifteen cents, and also young carrots, grown under glass on Long Island and in New Jersey. New okra is coming from Cuba, and parsley, Romain lettuce and kohl-rabi from Bermuda. Last week's Bermuda steamer brought twelve crates of onions, the first of the season, which sold at $2.00 a crate, wholesale. Chervil, delicate and fresh-looking, from hot-houses on Staten Island, is selling in considerable quantities, as also tarragon, and spring lamb has made an active demand for mint and for peas. Besides peas from Florida, a considerable supply is received from California. These are well filled out and tender, in baskets holding a half-peck, and cost seventy-five cents.

The so-called Paradise nuts, known in English markets as the Sapucaia nuts, are rather more common in our fruit stores this winter than they formerly were, and sell for fifty cents or more a pound. These nuts are closely allied to the Brazil nuts, although they are superior in flavor and more wholesome. They are about two inches long or rather more, and half as thick through, with a corky shell furrowed lengthwise, and they are the true seeds of the large, urn-shaped woody fruit of Lecythis Zabucajo. This pericarp is six inches across and half an inch thick. It is very hard, and has a lid which fits tightly at the top, and which, when the fruit is quite ripe, is easily lifted off, and this gives the general name of Monkey Pot to the several trees of this genus. These trees grow in the forests of Brazil, Guiana and Venezuela, where their great trunks are seventy-five or more feet high, carrying a broad head of glossy leaves. Sapucaia nuts keep for a long time, and some of those in the market here have been held for more than a year.

The florists' windows throughout the upper part of the city are now interesting and beautiful in their attractive displays of forced flowers. In a Fifth Avenue establishment flowers of the golden-banded Lily, Lilium auratum, make a rich show at this unseasonable time. Sprays of Calanthes bearing seven to fifteen flowers are occasionally seen, and cost $1.00, and those of Odontoglossum crispum command $1.50 to $6.00. Other Orchids now offered are varieties of Cypripedium insigne, Phalænopsis Schrœderiana, P. amabalis and Cattleya Trianæ. A small group of Cattleyas in a large window bedded with Adiantum cuneatum edged with Lycopodium, was one of the most artistic and refreshing window arrangements last week. Small plants of Azaleas, extremely well flowered, made a nosegay effect in their dressing of white crêpe paper, and branches of Pussy Willow seemed to deny winter in the bright glossy brown bark and silvery catkins, while Dracænas, grouped among Palms and other green-foliaged plants, were hardly less showy and effective than flowering plants.

According to the *Northwest Magazine*, a great fruit fair was recently held at Spokane, Washington, and although the admission fee was fixed at the nominal sum of ten cents and it was necessary to construct a great building of timber and canvas, after all expenses had been paid the net profits amounted to $1,000, which was turned over to the treasurer of the Bureau of Immigration, under whose direction the fair was held. There were 52,000 paid admissions, the visitors coming on cheap fares from all parts of Washington, Idaho, Oregon, Montana and British Columbia. The trains carried from one thousand to three thousand people every day, and the aggregate number of strangers entertained by the city often ran up to five thousand daily. Although the exhibition was open to all products of the soil, fruits were the principal objects of display, and there were tons of fresh fruits, dried fruits and canned fruits. Seventy varieties of apples were exhibited, not to speak of other green fruits, besides a profusion of cereals, grasses, flax, broom-corn, sugar-cane, melons, tobacco, hops and native wines, so that fifty thousand feet of floor-space under roof and canvas were occupied. When we consider that the fruit industry of this region is comparatively young, both the exhibition and the interest it excited were remarkable.

To make good the shortage of oranges in the United States, caused by the loss of the Florida crop, many remote countries are being drawn upon. Jamaica, Mexico, north and south California, Spain and Sicily have each contributed to our markets, and cases of oranges from the Holy Land have recently been put on sale in Chicago. This fruit is said to be light-colored, oval, carefully packed and in excellent condition. It was grown in the district between Jerusalem and Jaffa and sold for $4.00 a case. Only meagre reports of the effects of the freezing weather in California on the last days of the year have gone out from that state. Conservative business men here who have much to lose by the failure of the California orange crop, and every reason to wish for heavy shipments of choice fruit, estimate that as much as eighty per cent. of the oranges in the Riverside district are frozen on the trees, while Redlands, Arlington Heights and other elevated sections suffered little injury. The intense cold continued during the nights of December 29th and 30th, the anniversary of the fatal freeze in Florida the year before. The thermometer is said to have registered as low as seventeen degrees, Fahrenheit, at Riverside, and since the trees were killed in Florida at fifteen degrees, the groves themselves may have suffered, and this would be a more serious matter than the loss of a single crop. Hardly ten per cent. of the crop had been marketed, prices for Navels here being $4.25 to $4.50 a box at wholesale. Some oranges frozen in transit during the same period of severe weather have brought but $1.60 to $1.80 here, and the depression of prices will continue for fruit now on the way and suspected of having suffered on the trees. In the event of serious injury in California the Mediterranean supply must now be the main dependence, and the quantity of oranges and lemons imported from Italy, Sicily and Spain last season, 2,222,044 boxes, is likely to be greatly increased.